REPORT

OF THE

BOTANICAL AND FORESTRY

FOR THE YEAR

1933

IMPERIAL MYCOLOGICAL INSTITUTE
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REPORT ON THE BOTANICAL AND FORESTRY DEPARTMENT FOR THE YEAR 1933.

General.

The weather, throughout the whole year, was generally favourable, to both gardening and forestry operations.

2. The rainfall for the year, as recorded by the guage in the New Garden, was 73.56 inches in 134 days as against 92.58 inches in 126 days in the preceding year.

3. January 28th was the coldest day of the year, the only plants damaged by the low temperature were *Clerodendron splendens* and *Acalypha tricolor*.

4. Typhoon signals were hoisted on seven occasions during the year; only slight damage was done by the gale on November 6th, which destroyed a number of street trees in Kowloon.

Gardens, Parks and Grounds.

5. *Botanic Gardens*.—The construction of a service reservoir by the Public Works Department, in the Old Garden was completed. A fountain was constructed in the centre of the area, a large stone seat was placed on the north side, two stone seats and a lavatory at the east and a shelter and two small drinking fountains at the west, and all paths were relaid in concrete and 24 additional garden seats of the usual type were provided. The major portion was covered with black soil and turfed. The whole was opened to the public on August 15th. The north entrance gate in Upper Albert Road was replaced by a wall; a new gate, leading to Albany Road, was provided.

6. The specimen of *Keteleeria Fortunei*, Carr. in the New Garden, produced numerous cones, from which viable seeds were extracted.

7. The number of trees, shrubs and pot plants sold during the year was 1,826.

8. *Government House Grounds*.—One new bed was formed on the north side and planted with Canadian roses.

9. *Colonial Cemetery.*—Numerous trees, of various sizes, were removed from the older burial sections, in order to prevent further damage to graves and headstones. The bamboo hedge along the Wong Nei Chong Road boundary, was lifted and replanted.

10. *Kowloon Hospital Grounds.*—Additional large areas of ground, in the vicinity of a new hospital block and quarters, were levelled and turfed. *Casuarina equisetifolia* planted at the top and *Pinus Massoniana* on the slope of the bank above the approach road made good progress during the year.

11. *Royal Observatory Grounds.*—Two Banians (*Ficus retusa*) two *Celtis sinensis* and one *Lagerstroemia indica* were felled in order to make room for the building of the new quarters.

12. *Mountain Lodge; Colonial Secretary's Residence; Government Pavilions and Villas; Homestead Quarters; Victoria Hospital; Cenotaph Plots; Statue Square Plots; Government Offices; Parade Ground; Volunteer Headquarters; The Eyrie; West End Park; Civil Hospital; Mental Hospital; Senior Officers' Quarters, Leighton Hill; Indian School; Kowloon Magistracy* and *King's Park.* The areas of ground, under the control of this Department, at the places mentioned were kept in good order generally; undersirable undergrowth was regularly cleared, additional trees and shrubs were planted where possible, grass banks and lawns, trees, shrubs and flower beds were given such attention as they required.

Herbarium and Library.

13. All cabinets were thoroughly overhauled and where necessary taken down and rebuilt, this will greatly facilitate the handling of the plant specimens. Sixty-one specimens were added to the local and general collections. Twelve new books were purchased and 667 bulletins and other publications were added to the Library. Plant specimens of botanical interest or economic value were identified for local collectors and various institutions outside the Colony.

Forestry.

14. *Formation of Pine Tree Plantations.*—Increased areas were dealt with during the year, the number of sowings *in situ* of *Pinus Massoniana* amounted to 331,658, an increase of 72,000 over the previous year; the areas dealt with were Taipo Kau Ferestry Reserve, both inside and outside the reserve in Mount Collinson Prohibited Area, Stanley, Kowloon and Shek Li Pui Catchment Areas, Red Hill (Stanley), Mount Cameron and Sai Kung Road.

15. On areas where results of the previous years sowings *in situ* were below standard, seeds of *Pinus Massoniana* were sown by the broadcast method, burnt areas were similarly dealt with; the total weight of seed used was 2,089 pounds.

16. *Pine Seed Collection.*—The Fan Ling plantations, from which the main supplies of local seed have been obtained in recent years, produced a comparatively poor crop of cones, from which only 345 pounds of seed could be extracted. Cones were collected for the first time from the young plantations between Kowloon Rifle Range and Diamond Hill. The work was in progress at the end of the year.

17. *Broad-leaved Trees Planted.* Tree nurseries for raising stock for this work are maintained at Kowloon Tsai, Taipo Kau, Little Hong Kong and Cheung Chau. The following were used in the formation of plantations of various sizes and the maintenance and extension of the roadside planting scheme, *Liquidambar formosana*, *Melia Azedarach*, *Artocarpus hypargyraea*, *Sapium discolor*, *Aleurites montana*, *Aleurites triloba*, *Sterculia lanceolata*, *Bauhinia Blakeana*, *Bauhinia variegata*, *Tristania conferta*, *Melaleuca Leucadendron*, *Cassia glauca*, *Callistemon rigidus*, *Callistemon lanceolata*, *Cinnamomum Camphora*, *Bischofia javanica*, *Acacia confusa* and *Acacia Farnesiana*, the total number of young trees used was 8,421.

18. *Cheung Chau.*—Six hundred young *Casuarina equisetifolia* and thirty *Aleurites Fordii* were planted on roadsides and other suitable areas; the majority of the trees were raised in the small nursery, which is maintained on the island. Groups of *Pandanus forceps* in the vicinity of bathing beaches, which were reported to be harbouring snakes, were destroyed.

19. *Aleurites montana* in all districts produced a fair crop of seeds, *Aleurites Fordii* produced only a very small crop; all trees of the latter species used for local planting are now raised from locally collected seeds. It is hoped by this method to produce a type of tree which will give better results than those raised from imported seeds.

20. *Insect Pests.*—Pine Tree Caterpillars (*Dendrolimus punctatus*) appeared in the Pine plantations at Fan Ling in January, but very fortunately only in small numbers; collection and burying, the only effective method of saving the trees, was commenced during February. The total weight of the caterpillars destroyed amounted to 480 pounds.

21. *Forest and Hill Fires.*—During the year 58 fires occurred as against 71 in 1932; the most serious damage was done in a young plantation below Shek O Road and a licensed plantation on Lan Tao Island. In the former 2,500 young pines were destroyed by a comparatively small fire and in the latter many thousands of trees were lost.

22. Only one large fire broke out on the day of Ching Ming Festival and not a single fire occurred on the day of Chung Yeung Festival; the usual numerous handbills were distributed and warning notices posted; the vernacular press also kindly gave prominence to a notice requesting persons visiting graves and cemeteries to take precautions against causing damage by fire.

23. *Taipo Kau Forestry Reserve.*—Young trees of *Artocarpus integrifolia*, raised from seed sown *in situ*, were badly damaged by rodents; Trees of economic value, to the number of 2,567 were raised in the nursery and planted in groups in the most suitable portion of the reserve; three thousand cuttings of *Cunninghamia sinensis*, collected from trees in various parts of the Colony, were planted in the nursery.

24. Trees of *Acacia confusa*, planted in 1928, produced seeds for the first time.

25. The service path in the highest portion of the reserve was extended.

26. *Trees Felled.*—Large areas of *Pinus Massoniana* and indigenous trees were cleared in connection with the formation of reservoir and catchment areas, building sites, roads and other public works.

27. The demolition of a portion of the City Hall and the erection of adjoining new buildings, necessitated the removal of the two old Cotton Trees (*Bombax malabaricum*) and one old Banian from the open space in front of the Hall; in connection with road widening and other work made necessary by increased vehicular traffic, 57 large shade trees, in various parts of the Colony were removed.

28. *Forest Guards Services.*—Damage by theft of Pine trees was heaviest at Tin Wan, Aberdeen, Cheung Sha Wan and Quarry Bay; one case of theft of large native oaks occurred at Tai Tung. The trees in this case were recovered. Numerous cases of Pine needle raking occurred in all districts. The damage caused by this practice, which is mainly carried on by children, who are sent out by their parents, is one of the greatest obstacles to successful reafforestation with which the Department has to deal.

29. The total number of persons arrested and charged with various forestry offences by Forest Guards, was 150, of these 139 were convicted and fined or sentenced to terms of imprisonment. The Police arrested 230 persons and 226 were convicted. Ten persistent offenders were banished.

30. *Protection of Plantations.*—All fire barriers and forestry paths were cleared and repaired, the total length of paths dealt with was 43 miles and barriers 58 miles. At the request of the Military Authorities, the existing barriers on Mount Davis were increased in width from 10 to 20 feet; one new barrier was made on the same area. The service path on Mount Collinson was extended by 2,300 feet. This path was connected to the Shek O Road by a new path 1,040 feet in length. 54 new barriers were made round isolated graves on hillsides in various parts of the Colony.

31. *Undergrowth Clearing.*—In all parts of the Colony, the total area cleared in connection with anti-malarial work was 3,764,605 square feet; other areas cleared in connection with the formation of catchments, reservoirs, roads, buildings and general public improvements amounted to 8,620,695 square feet.

32. *Preservation of Local Flora.*—Many of the uncommon flowering plants on the Island have been greatly reduced in number and are now in danger of being completely destroyed, chiefly owing to the extensive development of outlying areas of land which is being carried on. Other causes are the depredations of plant hawkers, medicinal herb collectors and thoughtless flower pickers. Ferns have also suffered, notably *Asplenium Nidus*, which was, until a few years ago, numerous on rocks in many nullahs, and has now almost entirely disappeared.

33. In order to prevent the threatened destruction, a commencement was made with the scheme of removal; 363 plants of the terrestial Orchid *Plantanthera Susannae*, Lindl. and 686 of *Iris speculatrix*, Hance, were lifted in various parts of the Island and replanted in suitable spots in Mount Collinson Prohibited Area, where, it is hoped, they will be allowed to remain undisturbed.

34. *Lantana Destruction.*—Both local species of this plant, which flourish in the poorest of soil, are rapidly increasing in all parts of the Colony. Large areas were cleared of the plants during the year.

35. The Entomologist, Board of Commissioners of Agriculture and Forestry, Territory of Hawaii, kindly supplied this Department with a consignment of the Lantana Seed Fly and the Lantana Plume Moth. Both insects are Lantana parasites, the former attacks and destroys the unripe seed and the latter destroys the unopened flower buds. The insects were liberated on July 21st in suitable spots. So far there is no evidence as to whether they have survived.

Agriculture Etc.

36. *Fan Ling Experimental Garden.*—*Cajanus indicus*, grown as a shade plant, did not give sufficient protection to the plots of Citrus and Avocado Pear (*Persea gratissima*) in the recently formed extension, both were lifted and replanted in the old portion of the garden, the Avocado Pears were shaded by planting alternately with Bananas and soon commenced to make rapid growth. A plot of foreign vegetables, all of which can be raised and harvested during the season when land is not required for Padi, was grown for demonstration purposes and for exhibition at the New Territories Agricultural Show.

37. *Inspection of Nursery Stock and Vegetable Products.*— Fourteen consignments of Sugar Cane, totalling 99,900 pieces were inspected and certified as fit for export to Singapore. Seventy-two consignments of vegetables, both fresh and preserved, were passed for export to the Philippine Islands and fourteen lots of miscellaneous live plants and seeds to various countries. *Narcissus Tazetta*, seventeen consignments, containing 174,020 bulbs were inspected and passed for export to Britain, Canada, United States of America and Japan.

Seed Collection.

38. Seeds of the following were collected for local use and for the purpose of exchange:—*Albizzia Lebbek*, *Atalantia Hindsii*, *Aleurites Fordii*, *Aleurites montana*, *Aleurites triloba*, *Acacia confusa*, *Acacia pennata*, *Artocarpus integrifolia*, *Ardisia crispa*, *Bischofia javanica*, *Bauhinia variegata*, *Cinnamomum Camphora*, *Cassia glauca*, *Cassia fistula*, *Cunninghamia sinensis*, *Casuarina equisetifolia*, *Callistemon rigidus*, *Callistemon lanceolata*, *Cupressus macrocarpa*, *Diospyros Morrisiana*, *Datura alba*, *Eucalyptus tereticornis*,, *Garcinia oblongifolia*, *Gyptostrobus heterophyllus*, *Ilex pubescens*, *Iris speculatrix*, *Leucaena glauca*, *Lilium Brownii var. Colchestri*, *Melia Azedarach*, *Melaleuca Leucadendron*, *Marlea begoniaefolia*, *Pterocarpus indicus*, *Pithecolobium dulce*, *Phoenix Roebelinii*, *Pentaphylax euryoides*, *Quercus cornea*, *Quercus Edithae*, *Quercus thalassica*, *Quercus Championi*, *Quercus polystachya*, *Quercus Elizabethae*, *Rhodoleia Championi*, *Strychnos angustifolia*, *Sapium sebiferum*, *Sterculia lanceolata* and *Tristania conferta*.

Exchange of Seeds, Etc.

39. The Department is indebted to the following donors of seeds, plants &c. The Harvard Botanical Gardens, Soledad, Cienfuegos, Cuba; The Arnold Arboretum, Harvard University; Dr. M. O. Pfister; Major Manners; Professor Woon-yung Chun (Canton); The Mow Fong Garden; Hon. Sir William Shenton; Mrs. Harrington; Mrs. R. E. Hoare; and Messrs. E. H. Lewis; J. F. Grose; R. A. Pereira; A. P. de V. Soares; W. J. S. Key; A. Stevenson and Messrs. Edward Webb & Sons, Ltd. (England).

40. The following were the principal recipients:—The Director, Department of Agriculture, Zomba, Nyasaland; The Curator, Royal Botanic Gardens, St. Clair, Trinidad, British West Indies; The All-union Institute of Plant Industry, Sukhum Section of Humid Subtropics, Sukhum, Abkhazia, Transkaukasus, U. S. S. R.; The Head of Department of New Cultures and Introduction, Institute of Plant Industry of the Lenin Academy of Agricultural Sciences, Leningrad, U. S. S. R.; Sir Oscar Warburg, O.B.E. (England); Professor Woon-yung Chun (Canton); Senor Matheus D'Andrade Albuquerque (Azores); Dr. H. C. Sampson (England); Rev. E. W. L. Martin; Rev. E. G.

Powell; The Mow Fong Garden and Messrs. D. F. K. Shepherd (Palestine); A. Birche (Egypt); James C. Stevens (U.S.A.); S. S. Benjamin (France), D. Datta (India); A. H. Crook (England); E. H. Lewis; H. Humphreys; D. Tyer and Carlos de Sá Nogueira (Macao).

Revenue and Expenditure.

41. Statements of Revenue and Expenditure of the Department are given in Tables I, II & III.

H. GREEN,
Superintendent.

21st February, 1934.

Table I.

Comparative Statement of Expenditure for 1932 & 1933.

Expenditure.	1932	1933
	$	$
Personal Emoluments	78,719.67	79,688.55
Other Charges.		
Brushwood Clearing	4,988.45	6,998.55
Conveyance Allowances	2,071.94	2,370.00
Expenses of Collections	196.80	193.59
Field Allowances to Foresters ...	527.86	588.93
Forestry	15,949.86	15,997.59
Forestry Reserve, Taipo Kau ...	3,978.35	3,994.17
Incidental Expenses	343.13	349.34
Library	299.86	299.68
Light	191.08	209.47
Maintenance of Gardens	9,998.70	9,942.92
Protection of Plantations	1,404.19	1,528.62
Transport	1,439.77	1,596.85
Uniform & Accoutrements	946.09	995.37
Upkeep of Car	985.82	1,008.60
Total Other Charges	43,321.90	46,073.68
Special Expenditure.		
Repairs to Herbarium Cabinets.	—	999.64
Total Botanical & Forestry Dept.	122,041.57	126,761.87

Table II.

COMPARATIVE STATEMENT OF REVENUE, 1932 & 1933.

Revenue.	1932	1933
	$	$
Timber Sales	1,908.65	4,052,83
Plant Sales	2,652.65	1,237.70
Loan of Plants	128.60	177.80
Forestry Licences	11,005.39	11,268.48*
Forfeiture	—	15.00
Sale of Condemned Stores	—	16.99
Overpayments in Previous Years	—	5.19
Other Miscellaneous Receipts..	1,333.70	860.97†
Total	17,028.99	17,634.96

* Collected by District Officer.

† Including $850 for Inspection of Nursery Stock as against $1,200 in 1932.

Table III.

COMPARATIVE STATEMENT OF EXPENDITURE AND REVENUE FOR THE PAST TEN YEARS.

Year.	Personal Emoluments & Other Charges.	Special Expenditure.	Total Expenditure.	Total Revenue.
	$	$	$	$
1924.....	86,396.80	120.00	86,516.80	13,038.79
1925.....	88,132.99	8,238.64	96,371.63	9,806.95
1926.....	87,757.80	2,230.21	89,988.01	10,798.95
1927.....	95,722.45	—	95,722.45	7,861.76
1928.....	99,178.99	—	99,178.99	8,849.35
1929.....	101,146.23	—	101,146.23	11,885.97
1930.....	120,565.39	3,809.67	124,375.06	12,376.46
1931.....	121,189.43	—	121,189.43	11,717.67
1932.....	122,041.57	—	122,041.57	17,028.99
1933.....	125,762.43	999.64	126,761.87	17,634.96